

DECLARATION AND POWER OF ATTORNEY

DECLARATION:

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe, the below named inventors are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention for VIDEO TRANSCODER WITH DRIFT COMPENSATION, the specification of which is attached hereto unless the following box is checked.

[] was filed on > as Application Serial Number > and was amended on > (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

0954020 034404

PRIOR FOREIGN APPLICATIONS

Number	Country	Date Filed	Priority Claimed (Yes/No)
>	>	>	>
>	>	>	>
>	>	>	>

I hereby claim the benefit under Title 35, United States Code §119(e) of any United States Provisional application(s) listed below.

APPLICATION NUMBER	FILING DATE
>	>
>	>

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

PRIOR UNITED STATES APPLICATIONS

Application Serial Number	Filing Date	Status
>	>	>

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY:

On behalf of Mitsubishi Electric Research Laboratories, Inc., Assignee of my entire right, title and interest, I hereby appoint the following attorney with full power of substitution to act exclusively for Mitsubishi Electric to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: Dirk Brinkman, Reg. No. 35,460.

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1  # 1. Import the necessary libraries
2  import pandas as pd
3  import numpy as np
4  from sklearn.preprocessing import StandardScaler
5  from sklearn.model_selection import train_test_split
6  from sklearn.metrics import r2_score
7  from sklearn.linear_model import LinearRegression
8  from sklearn.ensemble import RandomForestRegressor
9  from sklearn.svm import SVR
10 from sklearn.neighbors import KNeighborsRegressor
11
12 # 2. Load the dataset
13 data = pd.read_csv('data.csv')
14
15 # 3. Preprocess the data
16 # Drop missing values
17 data.dropna(inplace=True)
18
19 # Split the data into features and target variable
20 X = data[['feature1', 'feature2', 'feature3']]
21 y = data['target']
22
23 # Standardize the features
24 scaler = StandardScaler()
25 X_scaled = scaler.fit_transform(X)
26
27 # Split the data into training and testing sets
28 X_train, X_test, y_train, y_test = train_test_split(X_scaled, y,
29                                                    test_size=0.2,
30                                                    random_state=42)
31
32 # 4. Train the models
33 # Linear Regression
34 lr = LinearRegression()
35 lr.fit(X_train, y_train)
36
37 # Random Forest Regressor
38 rf = RandomForestRegressor()
39 rf.fit(X_train, y_train)
40
41 # Support Vector Regression
42 svm = SVR()
43 svm.fit(X_train, y_train)
44
45 # K-Nearest Neighbors Regressor
46 knn = KNeighborsRegressor()
47 knn.fit(X_train, y_train)
48
49 # 5. Evaluate the models
50 # Linear Regression
51 lr_pred = lr.predict(X_test)
52 lr_r2 = r2_score(y_test, lr_pred)
53
54 # Random Forest Regressor
55 rf_pred = rf.predict(X_test)
56 rf_r2 = r2_score(y_test, rf_pred)
57
58 # Support Vector Regression
59 svm_pred = svm.predict(X_test)
60 svm_r2 = r2_score(y_test, svm_pred)
61
62 # K-Nearest Neighbors Regressor
63 knn_pred = knn.predict(X_test)
64 knn_r2 = r2_score(y_test, knn_pred)
65
66 # 6. Print the results
67 print('Linear Regression R^2: {}'.format(lr_r2))
68 print('Random Forest Regressor R^2: {}'.format(rf_r2))
69 print('Support Vector Regression R^2: {}'.format(svm_r2))
70 print('K-Nearest Neighbors Regressor R^2: {}'.format(knn_r2))
71
72 # 7. End of the script

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2.